

WHAT IS CLAIMED IS:

1                    1.     A method for moving teeth, said method comprising:  
2                    determining an occlusion from a computer model of a patient's teeth; and  
3                    generating a plurality of appliances based on the occlusion, wherein the  
4                    appliances comprise polymeric shells having cavities and wherein the cavities of successive  
5                    shells have different geometries shaped to receive and resiliently reposition the teeth from  
6                    one arrangement to a successive arrangement.

1                    2.     The method of claim 1, wherein determining an occlusion comprises  
2                    using one or more keys.

1                    3.     The method of claim 2, wherein one of the keys is based on a molar  
2                    relationship.

1                    4.     The method of claim 3, further comprising occluding a first permanent  
2                    molar with a second permanent molar.

1                    5.     The method of claim 4, wherein the first permanent molar has a disto  
2                    buccal cusp with a distal surface and the second permanent molar has a mesiobuccal cusp  
3                    with a mesial surface and wherein the distal surface occludes with the mesial surface.

1                    6.     The method of claim 5, wherein the mesiobuccal cusp occludes in a  
2                    groove between mesial and middle cusps of the first permanent molar.

1                    7.     The method of claim 4, wherein the mesial surface closely approaches  
2                    the distal surface.

1                    8.     The method of claim 3, wherein the teeth include canines and  
2                    premolars and wherein the canines and premolars have a cusp-embrasure relationship  
3                    buccally and a cusp-fossa relationship lingually.

1                    9.     The method of claim 2, wherein one of the keys is based on an  
2                    angulation of a crown.

1                    10.    The method of claim 9, wherein the crown has a distal crown tip,  
2                    further comprising determining a distal inclination of a gingival portion of the crown.

- 1 11. The method of claim 10, wherein the distal inclination is constant.
- 1 12. The method of claim 10, wherein the distal inclination is constant  
2 within each tooth type.
- 1 13. The method of claim 10, wherein the angulation is determined between  
2 a facial axis of the clinical crown (FACC) and a line perpendicular to an occlusal plane.
- 1 14. The method of claim 13, wherein the angulation is minimized.
- 1 15. The method of claim 9, wherein the angulation is positive.
- 1 16. The method of claim 9, wherein the angulation is negative.
- 1 17. The method of claim 2, wherein one of the keys is based on a crown  
2 inclination.
- 1 18. The method of claim 17, wherein the crown inclination represents an  
2 angle formed by a line perpendicular to an occlusal plane and the FACC.
- 1 19. The method of claim 17, wherein the crown inclination is negative  
2 when measured from an upper canine through an upper second premolar.
- 1 20. The method of claim 17, wherein the crown inclination is  
2 progressively more negative when measured from a lower canine through a lower second  
3 molar.
- 1 21. The method of claim 17, wherein the crown inclination between a line  
2 parallel and tangent to a facial axis of the clinical crown (FACC) at its midpoint and a line  
3 perpendicular to an occlusal plane.
- 1 22. The method of claim 2, wherein one of the keys is based on tooth  
2 rotation.
- 1 23. The method of claim 22, wherein the teeth are free of undesirable  
2 rotations.

- 1 24. The method of claim 2, wherein one of the keys is based on a tooth  
2 contact point.
- 1 25. The method of claim 24, wherein the contact point is tight.C
- 1 26. The method of claim 24, wherein no spaces exist between contact  
2 points.
- 1 27. The method of claim 2, wherein one of the keys is based on an occlusal  
2 plane.
- 1 28. The method of claim 27, wherein the plane ranges between flat to  
2 curves of Spee.
- 1 29. The method of claim 28, wherein the plane is flat.
- 1 30. The method of claim 28, wherein the plane follows a curve of Spee.
- 1 31. The method of claim 30, wherein the curve of Spee is deep.
- 1 32. The method of claim 30, wherein the curve of Spee is slight.
- 1 33. The method of claim 30, wherein the curve of Spee is reversed.
- 1 34. The method of claim 2, wherein one of the keys is selected from a  
2 group consisting of a molar relationship, a crown angulation, a crown inclination, teeth  
3 rotations, teeth contact points, and an occlusal plane.
- 1 35. The method of claim 2, further comprising optimizing a final  
2 placement of the teeth.
- 1 36. The method of claim 35, further comprising:  
2 identifying one or more features associated with the teeth; and  
3 generating a model of the teeth based on the identified features.
- 1 37. The method of claim 36, wherein at least one of the feature is  
2 identified automatically.

- 1 38. The method of claim 37, wherein at least one of the feature is  
2 identified by a user.
- 1 39. The method of claim 2, wherein the computer representation is an ideal  
2 model set of teeth.
- 1 40. The method of claim 36, wherein the ideal model set of teeth is derived  
2 from a cast of the patient's teeth.
- 1 41. The method of claim 36, wherein the ideal model set of teeth is derived  
2 from a patient with a good occlusion.
- 1 42. The method of claim 2, further comprising generating progress reports  
2 associated with the determined occlusion.
- 1 43. The method of claim 42, further comprising browsing the generated  
2 reports over a network.
- 1 44. The method of claim 43, wherein the network is a wide area network.
- 1 45. The method of claim 44, wherein the wide area network is the Internet.
- 1 46. The method of claim 43, wherein the network is a local area network.
- 1 47. The method of claim 42, wherein the progress report is viewed by a  
2 patient.
- 1 48. The method of claim 42, wherein the progress report is viewed by a  
2 clinician.
- 1 49. The method of claim 2, wherein the user manipulates the computer  
2 representation of the masticatory system.
- 1 50. The method of claim 49, wherein the user is a patient.
- 1 51. The method of claim 50, wherein the user is a clinician.
- 1 52. The method of claim 2, further comprising:  
2 generating a model the teeth; and

3 adjusting teeth position in the model by following a prescription.

1 53. The method of claim 2, further comprising:  
2 generating a model the teeth, the model having a visual appearance; and  
3 adjusting teeth position in the model until the visual appearance of the model  
4 is satisfactory.

1 54. The method of claims 52, wherein the model is based on an abstract  
2 model of idealized teeth placement.

1 55. The method of claim 54, wherein the abstract model is specified by  
2 one or more arch forms.

1 56. The method of claim 55, wherein the ideal model may be specified  
2 using one or more features associated with the teeth.

1 57. The method of claim 52, wherein the teeth position is customized to  
2 the patient's teeth.

1 58. The method of claims 53, wherein the model is based on an abstract  
2 model of idealized teeth placement.